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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/497,916	02/04/00	TORRES A	S1022/8385

MM91/0828

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EXAMINER	
NADAV,O	
ART UNIT	PAPER NUMBER
2811	

DATE MAILED: 08/28/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/497,916	Torres et al.
Examiner	**Art Unit**
ORI NADAV	2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Jul 11, 2000* .

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-6* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

DETAILED ACTION

Specification

1. The title of the invention is too long. A new title is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 3-6 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification describes a second bipolar transistor having an emitter formed by the substrate, a base formed by a first doped region of the second conductivity type formed in the substrate, and a collector formed by a second doped region of the first conductivity type within the first doped region. There is no support in the text of the specification for a first bipolar transistor having an emitter formed by the substrate, a base formed by a first doped region of the second conductivity type formed in the substrate, and a collector formed by a second doped region of the first conductivity type within the first doped region, as

recited in claim 3, in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6, insofar as in compliance with 35 U.S.C. 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over Aiello et al. (5,382,837).

Aiello et al. teach in figures 6 and 10 an integrated circuit including a vertical power bipolar transistor having a terminal formed by a chip substrate of a first conductivity type 53, a control circuit thereof, the control circuit isolated from the substrate by means of an isolation region 5, 34 of a second conductivity type, and a protection structure against polarity inversion of a substrate potential comprising a first bipolar transistor T2 with an emitter connected to the isolation region (via base and collector regions) and a collector connected to a reference potential input of the integrated circuit (via transistor T1), a bias circuit T4 for biasing the first bipolar transistor in a

reverse saturated mode when the substrate potential is higher than the reference potential, and a second bipolar transistor T3 with an emitter connected to the substrate and a base coupled to the isolation region for coupling the isolation region to the substrate through a high-impedance when the substrate potential is lower than the reference potential.

Although Aiello et al. do not teach using the device as a protection structure against polarity inversion of a substrate potential wherein the bias circuit biases the first bipolar transistor in a reverse saturated mode when the substrate potential is higher than the reference potential, this feature is inherent in Aiello et al.'s device, because Aiello et al.'s structure is identical to the claimed structure.

Note that the recitation of using the device as a protection structure against polarity inversion of a substrate potential has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Therefore, the claimed structure is considered to be at least obvious over Aiello et al.'s structure.

Regarding claim 2, Aiello et al. teach a bias circuit comprises a third bipolar transistor T4 with an emitter coupled to control terminal of the integrated circuit and a collector coupled to a base of the first bipolar transistor. Regarding the claimed limitations of using the control terminal to receive an external control signal which is used by the control circuit to cause switching of the power component and providing a voltage supply to the control circuit and to the bias circuit, note that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Regarding claim 3, Aiello et al. teach in figure 10 a first bipolar transistor is a vertical transistor having an emitter formed by the substrate, a base formed by a first doped region of the second conductivity type formed in the substrate, and a collector formed by a second doped region of the first conductivity type formed within the first doped region.

Regarding claim 4, Aiello et al. teach second and third bipolar transistors are isolated from the substrate by the isolation region.

Regarding claim 5, it would be obvious for an artisan to use first conductivity type is the N type, the second conductivity type is the P type, the first and second bipolar transistors are NPN transistors, and the third bipolar transistor is a PNP transistor in Aiello et al.'s device, because it is conventional to reverse the polarity of the transistor.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References A and N are cited as being related to bipolar transistors having isolation regions.

Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to *Examiner Nadav* whose telephone number is **(703) 308-8138**. The Examiner is in the Office generally between the hours of 7 AM to 3 PM (Eastern Standard Time) Monday through Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas, can be reached at **(703) 308-2772.**

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is **308-0956**

Tom Thomas

TOM THOMAS
SUPERVISORY PATENT EXAMINER

Ori Nadav

August 21, 2001